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REVIEW OF SECTORAL CLUSTERS, FIRST PHASE: TOXIC CHEMICALS AND HAZARDOUS WASTES

Radioactive wastes

Report of the Secretary-General

Addendum

1. The Commission on Sustainable Development, at its second session (16-27 May 1994), requested the Secretary-General to issue an addendum to the report of the Secretary-General on radioactive wastes (E/CN.17/1994/15), including information on radioactive waste contained in the national reports received subsequent to the date of the report. The present addendum has been prepared in response to that request. Since the date of the report, information has been received from Austria, Australia, China, France, Germany, India, Japan and the European Community.

2. Minimizing radioactive wastes generated in research, medicine and industry is a declared objective of Austria's radiation protection policy. Spent fuel from research reactors is shipped back to supplier States in compliance with all relevant safety regulations. The safe processing, conditioning, transport and storage of radioactive wastes generated from the above-noted activities have been guaranteed in Austria for two decades. Provisions made for the disposal of radioactive waste are subject to regular examination and inspection in accordance with national radiation inspection regulations.

3. Austria carries out research into health and environmental effects of long-term storage sites for low- and intermediate-level radioactive wastes. It supports efforts made by the International Atomic Energy Agency (IAEA) to harmonize standards governing the handling of radioactive wastes and to implement the code of practice for transboundary movements of nuclear wastes.

Austria respects the important restrictions imposed by individual States within the framework of multinational agreements. It advocates the protection of the marine environment and has always rejected the sea-dumping of radioactive wastes.

4. In Australia, the safe storage, transportation and disposal of radioactive wastes are promoted through codes of practice promulgated in state and territory regulations. Spent fuel from reactors is stored in accordance with international safeguards obligations pending a decision on its future treatment. Australia is a Party to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter and enforces the Convention through the Environment Protection (Sea Dumping) Amendment Act (1986) which prohibits dumping into the sea and the incineration at sea of radioactive material. It ratified the South Pacific Nuclear Free Zone Treaty (Treaty of Raratonga) which prohibits the dumping of radioactive wastes anywhere within the zone and by anyone within the territorial sea of signatories to the Treaty. An expert group has been assembled (since 1992) to undertake a country-wide study to select a suitable site for a near-surface repository for low-level and short-lived intermediate-level wastes generated in Australia.

5. Australia supports efforts within IAEA to introduce international radioactive waste safety standards, guidelines and codes of practice. It also supports research into radioactive waste management through participation in activities undertaken by the Nuclear Energy Agency (NEA) of the Organisation for Economic Cooperation and Development (OECD), IAEA and international forums on radioactive waste management. Australia is involved in research and development of methods for effecting the safe and environmentally sound treatment, processing and disposal of radioactive wastes. Australia has developed the SYNROC waste management technique for the disposal of high-level waste, and is pursuing its commercial application overseas.

6. Australia provides funds to the Technical Assistance and Cooperation Fund (TACF) of IAEA. TACF provides assistance and training to developing countries in the use of nuclear technology for power generation, and for scientific, resource, agricultural, medical, environmental and industrial applications, as well as for activities relating to radiation protection, safety of nuclear installations and waste management.

7. China attaches great importance to environmentally sound management of radioactive wastes, and in 1992 the State Council promulgated environmental policies for low- and intermediate-level waste disposal. There is, however, a need to (a) formulate an overall plan for radioactive waste management appropriate to the country's needs, (b) resolve the issue of final disposal of radioactive wastes and (c) establish safe and environmentally sound procedures for the management of large quantities of radioactive wastes generated from mining activities.

8. China is receiving assistance from such organizations as IAEA to improve the management of radioactive wastes through (a) formulation of an overall strategy for the management of radioactive waste, (b) formulation of laws and regulations, technical standards and criteria for the management of radioactive

wastes and (c) development of radioactive waste facilities and monitoring systems.

9. France pays particular attention to the coherence of its nuclear power programme and public acceptance of the programme. This is reflected in proper administration of the fuel cycle and appropriate management of radioactive waste. Issues relating to radioactive wastes are entrusted to l'Agence nationale pour la gestion des d'échets radioactifs (ANDRA), a public establishment under the Ministry of Industry, Research and Environment, independent of the Commissariat de l'énergie atomique, which employs, in addition to its team, researchers at universities, research institutions of the grandes écoles (prestigious, highly selective professional schools) and industrial institutes. In April 1993, ANDRA published a national inventory of all radioactive wastes sites.

10. A strict regulation sets emission standards for central electricity-generating stations and nuclear installations. These are enforced by the Ministry of Health. A large set of acts of legislation and regulations encompasses French policies for radioactive waste management. Short-lived wastes, which constitute 90 per cent of the total wastes produced, are stockpiled at the Contentin and Aube centres which have storage capacity for the next 40 years. For long-lived, high-level waste, the Act of December 1991 established rules of research that will lead to the appropriate management of such wastes: separation and transmutation of long-lived radioactive elements; possibilities of reversible and irreversible storage in deep geologic formations; and laboratory research including conditioning and long-term surface depositories for such wastes.

11. On 20 January 1994, France entered an accord with Norway to cooperate in the treatment of nuclear pollution arising from Russian nuclear activities in the Barents and Kara Seas. France accepts the Amendment to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter and is actively participating in the implementation of the provisions of the Convention. France is also party to regional maritime conventions as well as those concerned with marine pollution; examples include the Barcelona Convention, the Inter-Ministerial Conference on the North Sea, and the Convention for the Protection of the Marine Environment of the North-East Atlantic.

12. France does not export its radioactive wastes, and is of the opinion that each country should be responsible for all the waste that it produces. It is actively involved in international cooperation on the management of radioactive waste, with IAEA and NEA. It also actively participates in technical cooperation within the framework of the European Community. ANDRA and French industries benefit from their contract with their foreign counterparts through the exchange of experience on nuclear energy management issues.

13. Germany subscribes to the concept of safe and environmentally sound management of radioactive waste; and of unlimited, irrecoverable, ultimate disposal of the waste in deep geologic formations. The federal Government is responsible for establishing and commissioning the ultimate repositories. A final repository for low-level radioactive waste in Morseleben has been

approved. To this end, measures have been taken to retrofit and upgrade the repository in order to improve safety. Plans for a final repository for radioactive waste with negligible heat generation are being evaluated for approval. Meanwhile, preparations have been initiated for two further sites - at Ahaus and Greifswald - for intermediate storage facilities for radioactive wastes from ongoing operation and shutdown of nuclear powerplants as well as for the reprocessing of spent fuel elements.

14. Studies have been conducted above and below ground, to determine the suitability of salt formations at the Gorleben site for ultimate disposal of heat-generating high-level radioactive waste. Above-ground investigations are also to be performed at several other sites in different geologic formations in order to ascertain their suitability.

15. Germany has supported international research projects dealing with the management of radioactive wastes, and is currently working on an ordinance to translate corresponding European Union guidelines - for the safe transport of radioactive wastes - into national law. Moreover, the federal Government is participating in efforts aimed at updating and enhancing international transport regulations under the auspices of IAEA. Germany is a signatory to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.

16. India is concerned with the environmentally sound management of radioactive wastes. A nuclear waste management system exists and takes care of wastes generated from nuclear facilities as well as from nuclear applications in industry, research and medicine. There is a legal framework for the management of radioactive wastes and an independent regulatory body responsible for statutory control of health, safety and environmental protection issues. Research and development in waste management is provided by selected agencies. Other activities involve documentation and dissemination of information on the generation, storage and disposal of radioactive wastes.

17. Japan attaches importance to the promotion of research and development and international cooperation in the management of radioactive wastes. In order to ensure safe management of radioactive wastes, Japan will enforce safety regulations for storage, transport, treatment and disposal of the wastes in accordance with international laws and standards. It will abide by the international arrangements for the treatment of radioactive wastes. It will also contribute to the study of the assurance of nuclear safety matters conducted by such international agencies as IAEA.

18. The European Community has an ongoing research and development programme for radioactive waste management and disposal. Launched in the mid-1970s, the programme deals with wastes from the operation of nuclear powerplants and other installations associated with the nuclear fuel cycle and from spent fuel connected with dismantling operations of nuclear installations. The priorities of the current programme include (a) reduction of quantities of radioactive wastes and their release into the environment and the development of waste disposal packages; (b) demonstration of the feasibility of deep geologic waste disposal through pilot facilities, confirmation of the safety of the migration of radionuclides through the geosphere and development of related engineering

and safety studies; and (c) promotion of quality assurance and control with respect to processes, waste packages, facilities and waste management software.

19. The European Community Plan of Action in the Field of Radioactive Wastes was set up in 1980 as a framework for developing a coherent community policy in this field. The Plan of Action, which has been successfully implemented, required (a) provision of information on radioactive waste management to community institutions and to the public on a regular basis; (b) promotion of cooperation between member States on the development of waste disposal; and (c) harmonization of practices and policies. The Plan of Action was renewed by the Economic Community Council of Ministers in 1992; subsequently (in 1993) a European Community strategy in the field of radioactive management was presented to the Economic Community Council of Ministers for approval.

20. Community legislative action in the field of radioactive waste management is based on the 1957 Euroatom Treaty; basic safety standards for the protection of nuclear industry workers and the public at large have been introduced and updated regularly since 1959. A Directive on the Supervision and Control of Shipments of Radioactive Waste (Directive/92/3/EUROATOM) was adopted in February 1992. The provisions of the Directive are based on the IAEA code of good practice in the international transboundary movement of radioactive wastes. The Directive has set up a supervision and control system, including a compulsory and common notification procedure.

21. The fifth research and development programme on radioactive waste treatment, conditioning and disposal, especially deep geologic disposal, will be implemented during the period 1994-1998. Particular attention will be focused on waste quality control, decontamination and recycling of contaminated material, and partitioning and transmutations of long-lived radionuclides. A second EC Plan of Action, which calls for the continuation of the efforts of the first Plan of Action, has been approved for the period 1993-1999. The subject of wastes arising from outside the nuclear industry and that of individual waste with enhanced concentrations of natural radionuclides are included in the second Plan.